

10" Square (Hotplate) Magnetic Stirrer

User Manual



SCI500HS-Pro LCD Digital 10" Square Hotplate Magnetic Stirrer

Please read the User Manual carefully before use, and follow all operating and safety instructions!

Technical specifications and outline are subject to change without prior notice.

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Preface

Welcome to the “ 10” Square Hotplate Magnetic Stirrer”. Users should read this Manual carefully, follow the instructions and procedures, and be aware of all the cautions when using this instrument.

Service

When help needed, you can always contact your local distributor for technical support.

Please provide the customer care representative with the following information:

- Serial number (on the rear panel)
- Certification
- Description of problem (i.e., hardware or software)
- Methods and procedures adopted to resolve the problems
- Your contact information

Warranty

This instrument is warranted to be free from defects in materials and workmanship under normal use and service, for a period of 24 months from the date of invoice. The warranty is extended only to the original purchaser. It shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, accident or abnormal conditions of operation.

For claims under the warranty please contact your local supplier. You may also send the instrument directly to manufacturer, enclosing the invoice copy and by giving reasons for the claim.

1. Safety Instructions



Warning!

- Read the operating instructions carefully before use.
- Ensure that only trained staff works with the instrument.



Risk of burn!

- Caution when touch the housing parts and the hotplate which can reach temperature of 500 °C.
- Pay attention to the residual heat after switching off.



Protective ground contact!

- Make sure that socket must be grounded (protective ground contact) before use.

- When working wear personal safety guards to avoid the risk from:
 - Splashing and evaporation of liquids
 - Release of toxic or combustible gases
- Set up the instrument on a stable, clean, non-slip, dry and fireproof surface. Do not operate the

instrument in explosive atmosphere, with hazardous substances or under water.

- Gradually increase the speed, reduce the speed if:
 - Stirring bar breaks away due to high speed
 - The instrument is not running smoothly, or container moves on the base plate
- Temperature must always be set to at least 50°C lower than the fire point of the media used.
- Be aware of hazards due to:
 - Flammable materials or media with a low boiling temperature
 - Overfilling of media
 - Unsafe container
- Process pathogenic materials only in closed vessels.
- Check the instrument and accessories prior to each use. Do not use damaged components. Accessories must be securely attached to the device and can not come off by themselves. Always disconnect the plug before fitting accessories.
- When the external temperature sensor needed, the tip of the measuring sensor must be at least 5-10mm from vessel bottom and wall.

- The instrument can only be disconnected from the main power supply by pulling out the main or the connector plug.
- The voltage stated on the label must correspond to the main power supply.
- Ensure that the main power supply cable does not touch the hotplate. Do not cover the device.
- Forbid to put pressure and over heat media on the surface of glass ceramic that can be caused surface broken.
- The instrument may only be opened by experts.
- Keep away from high magnetic field.

2. Proper use

The instrument is designed for mixing and/or heating liquids in schools, laboratories or factories.

- Observe the minimum distances between the devices, between the device and the wall and above the assembly (min. 100 mm)

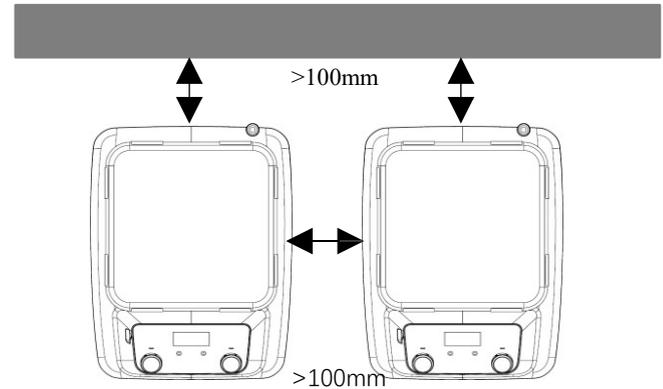


Figure 1

This device is not suitable for using in residential areas or other constraints mentioned in Chapter 1.

3. Inspection

3.1 Receiving Inspection

Unpack the equipment carefully and check for any damages which may have arisen during transport. Please contact supplier for technical support.



Note:

If there is any apparent damage to the system, please do not plug it into the power line.

3.2 Listing of Items

The package includes the following items:

Items	Qty
Main unit	1
User Manual	1

Table 1

4. Control

4.1 Control elements

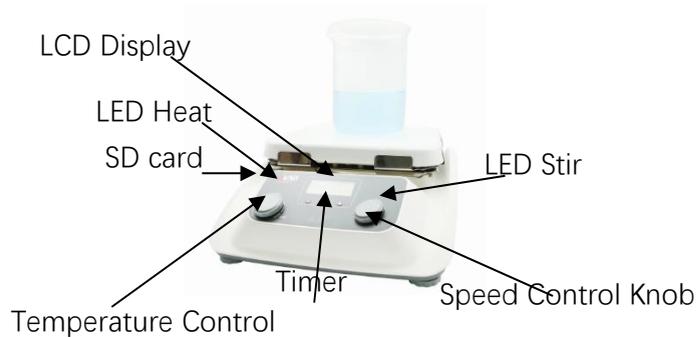
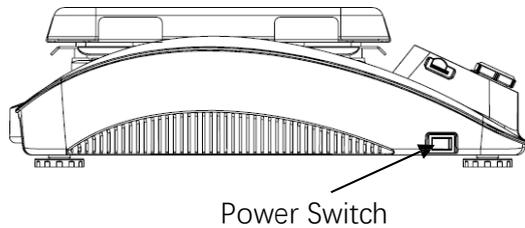


Figure 2



Items	Descriptions
Temperature control knob	The heating function is switched
Speed Control Knob	Set the rated rotary speed. The stirring function is switched ON or OFF by
LED Heat	When the heating function is switched ON, the LED Heat is lit
LED Stir	When the stirring function is switched ON, the LED Stir is lit
Timer	Press the knob, and then press “-“ or “+” can setting heating time value
LCD Display	If rotate the heating knob, LCD displays the temperature setting value(right side) and real value(left side)
SD card	The SD card can save the data of test
Power Switch	Switch ON or OFF the instrument.

Table 2

4.2 Display

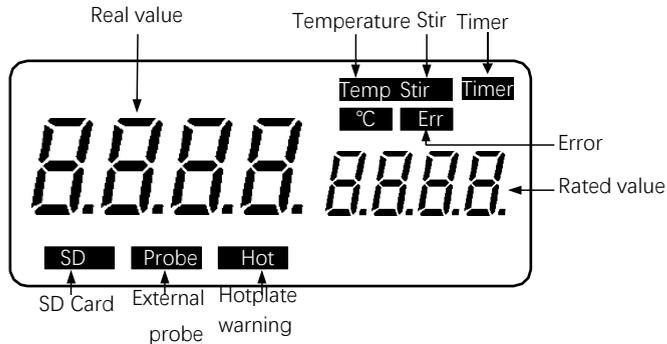


Figure 5 LCD digital model

Temp and °C	Display temperature when the heating function is switched ON
Stir	Display stirring state when the stirring function is switched ON
Timer	Display Timer parameter when the timer function is switched ON
Err	Display in case of error happening
Hot	Display hot warning if the heating plate temperature is above 50°C after switching OFF the heating

	function
Probe	Display when using external probe
SD	Display when using SD card
Rated value/Real value	Display values in when heating or stirring or timer function is switched ON.



Note:

If both heating and stirring functions have been started at the same time, heat display always has higher priority. If in this case speed is changed via the stirring knob, it displays stirring speed and reverts to temperature after 5 seconds. The timer can only control the heating time and the button will not work as the heating function has been started.

5. Trial run

- Make sure the required operating voltage and powersupply voltage match.
- Ensure the socket properly grounded.
- Plug in the power cable, ensure the power is on and begin initializing.
- Add the medium into the vessel with an appropriate stirring bar.
- Place vessel on the work plate.
- Set the target stirring speed and begin.
- Set the target heating time.
- Set the target temperature and start heating.
- Stop the heating and stirring functions.

If these operations above are normal, the device is ready to operate. If these operations are not normal, the device may be damaged during transportation, please contact your local dealer /supplier.



Warning!

Forbid to transfer the vessel when the instrument working.

6. Working with external temperature sensor

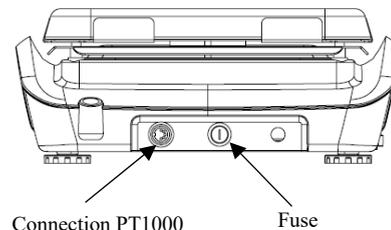
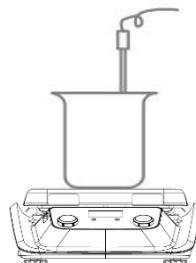


Figure 7

The external temperature sensor PT1000 is manufacture's standard accessory. If the sensor is plugged in, "Probe" will be shown on the LCD digital display to indicate the sensor is operating. The setting value of external temperature sensor and actual temperature are displayed. Safe circuit controls hotplate temperature. Comparing with the temperature control of the hotplate, the external temperature sensor can control the medium's temperature more precise. The heating function will be stopped automatically under abnormal conditions. Please operate follow the instructions below:

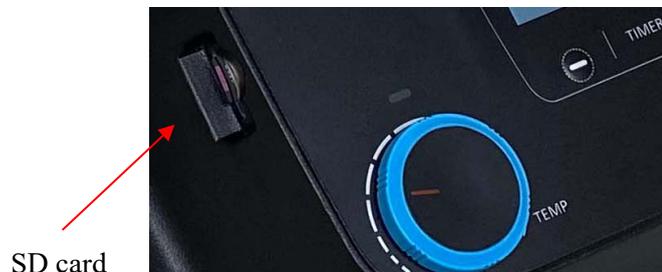
- Switch OFF the instrument.
- Ensure the external temperature sensor is inserted in the media heated.
- Switch ON the instrument and run heating function.

If the heating function does not work, please contact dealer/supplier for support.

7. Residual heat warning (HOT)

In order to prevent the risk of burns from the hotplate, the unit has a residual heat warning function. When the heating function is switched off and the heating plate temperature is still above 50°C, “Hot” will flash to warn that there is a hazard of burns from the hotplate. When the hotplate temperature drops to below 50°C, the unit will automatically switch off. If users want to turn off the LCD screen immediately, just pull out the plug directly. When the power OFF, the residual heat warning function cannot be run.

8. Logging function



SD card

Figure 8

The data can be saved by SD card. The process is as follows:
With the power switch turned off, insert the SD card into the slot on the left side of the panel.

After inserting it, turn on the power switch and operate the heating as described above. Set temperature at 1 minute intervals,

The current temperature will be logged automatically.

The logged data can be checked in Excel format by connecting the SD card to a personal computer.



Note:

The logging function starts automatically when you press the temperature control knob, and stops when you press it again.

Be sure to turn off the power switch when removing the SD card. It may cause a malfunction.

9. Faults

- Instruments can't be power ON
- Check whether the power line is unplugged
- Check whether the fuse is broken or loose
- Fault in power ON self test
- Switch OFF the unit, then switch ON and reset the instruments to factory default setting.
- Stir speed cannot reach set point
- Excessive medium viscosity may cause abnormal speed reduction of the motor
- Unit cannot be powered OFF when switched OFF.
- Check if the residual heat warning function is still ON and hotplate temperature is above 50°C (the LCD screen still work and "Hot" flash).

If these faults are not resolved, please contact dealer/supplier.

10. Maintenance and Cleaning

- Proper maintenance can keep instruments working properly and lengthen its lifetime.
- Do not spray cleanser into the instrument when cleaning.
- Unplug the power line when cleaning.
- Only use recommended cleansers:

Dyes	Isopropyl alcohol
Construction materials	Water containing tenside / Isopropyl alcohol
Cosmetics	Water containing tenside / Isopropyl alcohol
Foodstuffs	Water containing tenside
Fuels	Water containing tenside

- Wear the proper protective gloves during cleaning of the instrument.
- Before using other method for cleaning or decontamination, the user must ascertain with the manufacturer that this method will not harm the instrument.
- Send in the case of service the instrument back in the packaging carton. Storage packing is not sufficient for the back dispatch. Use additionally a suitable transportation

packing.

- The enamel makes the hotplate easier to care for and more resistant to acids and bases. Because of it, however, the hotplate is also more susceptible to extreme fluctuations in temperature and the force of impact. This can result in cracks forming or the coating flaking off.

11. Associated standards and regulations

Construction in accordance with the following safety standards:

EN 61010-1

UL 3101-1

CAN/CSA C22.2(1010-1)

EN 61010-2-10

Construction in accordance with the following EMC standards:

EN 61326-1

Associated EU guidelines: EMC-

guidelines: 89/336/EEG Instrument

guidelines: 73/023/EEG

Changes or modifications not expressly approved by the

party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

12. Specifications

Work plate Dimension [W x D]	254x254mm (10inch)
Work plate material	Glass ceramic
Motor type	Brushless DC motor
Stirring positions	1
Max. stirring quantity, [H ₂ O]	30L
Max. magnetic bar[length]	80mm
Speed range	100-1500rpm resolution±1rpm
Speed,time, Temperature display	LCD
Timer function	1min-99h59min
Heating temperature range	Room Temp.-500°C, increment1°C
Temperature control accuracy	±1°C (<100°C)±1%(>100°C)
Overheating protection	540°C
Temperature display accuracy	±0.1°C
External temperature sensor	PT1000(±0.2°C)
"Hot" warning	50°C
Data connector	SD card
Protection class	IP21
Power	1400W
Heating output	1350W
Voltage Frequency	100-120/200-240V 50/60Hz

Dimension [WxDxH]	328x424x138mm
Weight	7.18kg
Permissible ambient temperature and humidity	5-40°C, 80%RH

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